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SCHWEGMAN LUNDBERG WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

NGUYEN, BRIAN D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2661

10

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,025

Applicant(s)

DAMMANN ET AL.

Examiner

Brian D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed 1/15/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 27-49 are objected to because of the following informalities:

Claim 27, “the read block” in line 7 and “the write block” in line 9 seem to be typographical errors. “the read block” in line 7 should read ---the write block--- and “the write block” in line 9 should read ---the read block---.

Claims 30 and 33, “the memory unit” in line 2 seems to refer back to “memory” in line 3 of claim 27. If this is true, it is suggested to change “the memory unit” to ---the memory---.

Claims 37, “the memory unit” in lines 10 and 12 seem to refer back to “memory” in line 6. If this is true, it is suggested to change “the memory unit” to ---the memory---.

Claim 43, “the first port output” in lines 7-8 seems to refer back to “a port output” in line 3. If this is true, it is suggested to change “a port output” in line 3 to ---a first port output---. It is suggested to change “that port input” in line 2-3 to ---the first port input--- and “that port input” in line 5 to ---the second port input---.

Claim 44, it is suggested to change “that port input” in line 3 to ---the third port input---.

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Claim 48, "the flow-control" in line 1 seems to refer back to "a flow-control logic" in line 2 of claim 47. If this is true, it is suggested to change "the flow-control" to ---the flow-control logic---. "first buffer memory" in line 2 seems to refer back to "a first buffer memory" in line 2 of claim 43. If this is true, it is suggested to change "first buffer memory" to ---the first buffer memory---.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 27-31, 34-36, and 43-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevalia et al (6,526,495).

Regarding claims 27 and 34-36, Sevalia discloses a multi-port buffer comprising a plurality of buffer units, each including its own memory (102a-102n) having a write block and a read block (not shown), its own dedicated port input logic and dedicated port output logic (see figure 1; col. 1, lines 6-8 & 25-45; col. 2, lines 39-60), at least one multiplexer including an output coupled to one of the buffer units, a first input coupled to the port input logic of the one buffer unit, a second input coupled to another of the buffer units; flow control logic (107) to switch the multiplexer between its first and second inputs (see figure 1; col. 3, lines 10-42; col. 4, lines 12-23). Sevalia does not explicitly disclose the output of the multiplexer coupled to the write block of the one of the buffer units and the second input of the multiplexer coupled to the

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read block of the other of the buffer units. However, it is obvious that all the inputs to a buffer should go through the write logic and all the outputs from a buffer should go through the read logic so that storing of data in the memory can be controlled. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the output of the multiplexer coupled to the write block of one buffer and the second input of the multiplexer coupled to the read block of another buffer so that the reading and writing operation of the buffer can be controlled.

Regarding claims 28-29, Sevalia discloses the system use a plurality of multiplexers to serialize the buffer memories (see col. 3, lines 39-42).

Regarding claim 30, Sevalia does not specifically disclose at least some of the multiplexers have further inputs coupled to the memory of additional ones of the buffer units. However, Sevalia discloses that the multi-port buffer is programmable and data can be stored into multiple, selectable FIFO queues (see col. 1, lines 6-8 and 45-46). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use multiplexers with multiple inputs (more than 2) so that data can be stored into multiples, selectable memories.

Regarding claim 31, Sevalia discloses the buffer memories are physical discrete (see figure 2).

Regarding claims 43-49, claims 43-49 are method claims that have substantially all the limitations of the respective apparatus claims 27-31 and 34-36. Therefore, they are subject to the same rejection.

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5. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevalia et al (6,526,495) in view of Hendel (6,633,946).

Regarding claims 32 and 33, Sevalia does not explicitly disclose the multi-port buffer including a cross-bar switch. However, a multi-port buffer including a cross-bar switch is well known. Hendel discloses a cross-bar switch coupled between the memory and the port output logic (see figure 5; col. 6, lines 44-53). Therefore, it would have been obvious to one skilled in the art to have a multi-port buffer including a cross-bar switch so that data from one input port can be routed to any of the output ports.

6. Claims 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendel (6,633,946) in view of Sevalia et al (6,526,495).

Regarding claims 37, 39, and 41, Hendel discloses a system comprising a host computer; a plurality of channel to communicate data to a network; a channel adapter including multi-port buffer (see figures 3, 5-7; abstract). Hendel does not specifically disclose the multi-port buffer comprising a plurality of buffer units each including a memory having a write block and a read block, port input logic, port output logic; at least one multiplexer including an output coupled to the memory of one of the buffer units, a first input coupled to the port input logic of the one buffer unit, a second input coupled to the memory of another of the buffer units; a flow control logic to switch the multiplexer between its first and second inputs. However, Sevalia discloses a multi-port buffer including memory having a write and read blocks, port input/output logics, multiplexer, and flow-control logic (see figure 1; col. 2, lines 39-60; col. 3, lines 10-43). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

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invention was made to arrange the multi-port buffer as taught by Sevalia in the system of Hendel in order to control and effectively use of the memory buffer.

Regarding claims 38 and 40, Hendel discloses a multi-stage switch (see figure 6).

Regarding claim 42, Hendel does not specifically disclose the use of NGIO protocol.

However, to use NGIO protocol or any other well-known protocols is a matter of choice.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the NGIO protocol in order to meet the design criteria of a particular implementation.

Response to Arguments

7. Applicant's arguments with respect to claims 27-49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D Nguyen whose telephone number is (703) 305-5133.

The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian Nguyen
2/4/04